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Sim Dong-Hi

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35884

7590

10/29/2010

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EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2611

NOTIFICATION DATE

DELIVERY MODE

10/29/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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DETAILED ACTION

1. This action is responsive to amendment filed 8/6/2010.

Response to Remarks/Amendment

2. Applicant's remarks/amendment with respect to claims 38, 40, 42, 44 have been fully considered but they are not persuasive. Applicant remarks, page 4, "In Lee, the parity bits are derived from transport blocks via channel encoding (see pages 5-6, paragraph 0083 of Lee)." The applicant further remarks that dummy bits are not associated with data blocks. The examiner must point out that parity bits are considered as redundant or dummy bits, see for instance in Lee, page 1, section 0006, 0007, showing that systematic bit (information bits or data bits) and parity bits are also separately output with a systematic convolutional code, the systematic bits are pure user information to be transmitted and the parity bits are bits added to compensate for errors generated during transmission at decoding meaning that the parity or redundant bits are added (attached or inserted) to compensate for errors and that the bits are predefined according to a predefined rule by an interleaver according to a transmission scheme using antenna arrays in a transmitter and a receiver alone or together to achieve diversity using mutually independent (exclusive) fading signals. Examiner therefore, respectfully disagrees with applicants remarks that Lee fails to disclose dummy bits (parity or redundant bits) and is not predefined (implicitly implied). As to applicant's remarks, page 5, with reference to the amended portion reciting the limitation for ACK/NACK determined by the receiving side independently for each of the

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plurality of antennas through each of the at least two second data blocks and the dummy bits has been transmitted, the examiner failed to find support for ACK/NACK determined by the receiving side independently, in the disclosure. The examiner respectfully state that use of ACK/NACK feature in mobile communication is well known in the art for a system to request transmission or retransmission of data in situation of data transmission error (see for instance Kim 2002/0004924 page 1, sections 0008, 0011, 0012). The examiner finds that prior art to Lee and Kim discloses limitations as recited in claims 38 and 42. In conclusion, applicant's remarks are deemed not persuasive with attempt to overcome the above rejection, the rejection follows.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103 Miyoshi(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 38-42 are rejected under 35 U.S.C. 103 (a) as being unpatentable Kim et al (US Pub. 2002/0004924) in view of Lee et al (US Pub. 2003/0060173).

Regarding claim 38, 42, Kim discloses an apparatus (method) for transmitting data using a plurality of antennas in a mobile communication system, comprising: a data block segmentation unit (422) segmenting a first data block into at least two second data blocks (segments a number of data blocks that could include a first block and other blocks) (page 5, section 0065);

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a Cyclic Redundancy Check (CRC) attachment unit (a CRC inserter 421) attaching a CRC to each of the at least two second data blocks (page 5, section 0065, 0066, 0067); and wherein the channel status information is a positive acknowledgement (ACK) or a negative acknowledgement (NACK) determined by the receiving side independently for each of the plurality of antennas through which each of the at least two second data blocks and the dummy bits has been transmitted (the examiner respectfully state that use of ACK/NACK feature in mobile communication is well known in the art for a system to request transmission or retransmission of data in situation of data transmission anomaly response message, ACK/NACK, can be transmitted on physical control channel, a reverse message channel is used when the receiver transmits to the transmitter the signal indicating the receiving results of the received data block. (see for instance Kim 2002/0004924 page 1, sections 0008, 0011, 0012).

Kim however, does not disclose a data block allocation unit allocating each of the at least two second data blocks and dummy bits to the plurality of antennas based on the received channel status information, wherein each of the at least two second data blocks is allocated to an antenna having good channel status and only the dummy bits are allocated to an antenna having bad channel status, wherein the dummy bits are predefined between the apparatus and the receiving side and wherein each of the plurality of antennas transmits the allocated second data block or dummy bits.

However, Lee in a similar field of endeavor discloses allocating data groups (blocks) (page 2, section 0023) each of the at least two second data blocks and dummy bits to the plurality of antennas based on the received channel status information, wherein

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each of the at least two second data blocks is allocated to an antenna having good channel status (higher priority data through pair of antennas at good transmission status) and only the dummy bits (parity bits, lower priority data through a pair of antennas at poor transmission status) are allocated to an antenna having bad channel status, wherein the dummy bits are predefined between the apparatus and the receiving side (the bits are predefined according to a predefined rule by an interleaver according to a transmission scheme using antenna arrays in a transmitter and a receiver alone or together to achieve diversity using mutually independent (exclusive) fading signals) (page 1, sections 0006, 0007) and wherein each of the plurality of antennas transmits the allocated second data block or dummy bits (parity bits) (page 3, section 0029, 0034-0036; page 4, sections 0062; page 4-5, section 0067).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to assign dummy bits (parity or redundant bits or lower priority data bits) to antennas having bad channel status and assigning data to antenna having good channel status for transmitting data wherein the dummy bits (parity or redundant bits) are predefined as taught by Lee in the system of Kim because it can allow greater reception reliability with data transmission in a mobile communication as a whole. A person of ordinary skill in the art would be motivated to do so as it would increase an overall performance of a mobile communication system.

Regarding claims 40, 44, Kim discloses CRC is differently attached to each of the blocks (fig. 4).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutbuddin Ghulamali whose telephone number is (571)-272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.
October 21, 2010.

/CHIEH M FAN/
Supervisory Patent Examiner, Art Unit 2611